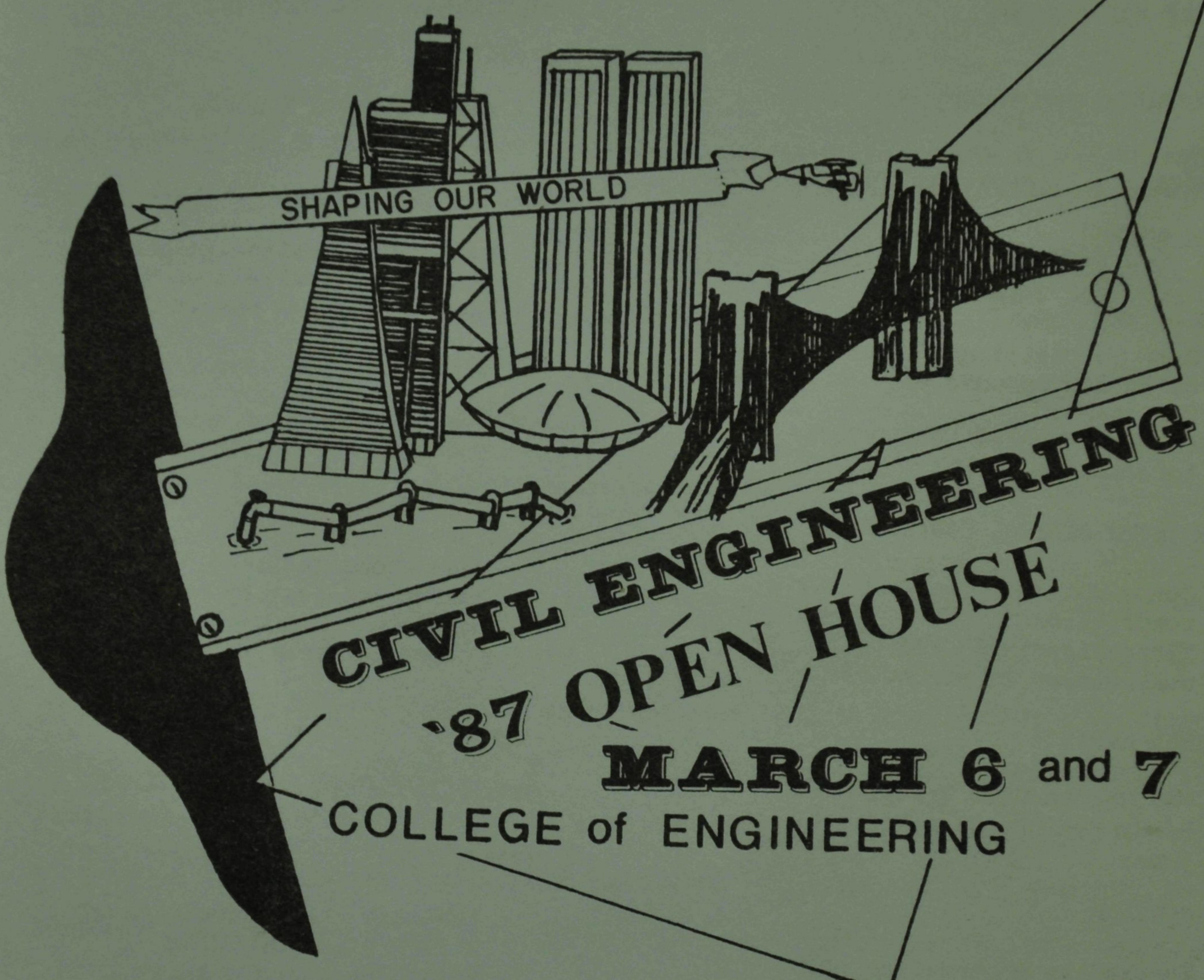


UNIVERSITY of ILLINOIS



CIVIL ENGINEERING  
'87 OPEN HOUSE  
MARCH 6 and 7  
COLLEGE of ENGINEERING

N.M. NEWMARK LAB.  
HYDROSYSTEMS LAB.

MARCH 6th 9:00 a.m. to 4:00 p.m.

MARCH 7th 9:00 a.m. to 3:00 p.m.

# CIVIL ENGINEERING EXHIBITS

## THEME OF EXHIBIT

- Shaping Our World

## NATHAN M. NEWMARK LAB. (Crane Bay)

ASCE

- Domino Matchup: Can you build a structure of dominoes?
- Concrete canoes
- Information Booth

## ASSOCIATED GENERAL CONTRACTORS

- Concrete cylinder strength competition
- "Infrastructure" The destruction of structures

## CENTRAL EXHIBIT

- The Golden Gate Bridge: Ready for the next fifty years

## CHI EPSILON

- Earthquake destruction of building
- Tacoma Narrows Bridge Incident
- Simulated Trout Stream

## GEOTECHNICAL

- Expert systems in geotechnical engineering
- Quicksand demonstration
- Bearing capacity failure
- Friction piles
- Reinforced earth embankment
- Constant head parameters

## MODEL SPAN

- 21st Annual ASCE contest of balsa wood bridges designed by students

## NEWMARK LAB. (Con'd.)

### STRUCTURAL

- Shaking table testing
- Vibration of a full-size building
- Fatigue testing of steel beams
- Structural design examples
- Structural analysis on the Apollo computer system

### SURVEYING

- The beginnings of a better tomorrow a surveying station

### TRANSPORTATION

- Read cross sections
- Making and testing of fresh concrete
- Road deterioration

## HYDROSYSTEMS LABORATORY

### HYDROSYSTEMS

- Drainage characteristics of 1 Park Place Building
- River formation display
- Water hammer display
- Groundwater simulation
- Water supply illusion
- Spillway model
- Computer simulation of dam and reservoir

## ENGINEERING HALL First Floor

- Civil Engineering Tree: The various branches of Civil Engineering

## FROM THE HEAD OF THE DEPARTMENT

What are your career plans? Could the exciting field of CIVIL ENGINEERING possibly be one of your choices? Visit Civil Engineering and let us illustrate the broad range of engineering activities open to you. Both students and faculty in civil engineering will be pleased to discuss this career field with you.

The Civil Engineering Department of the University of Illinois at Urbana-Champaign ranks among the top four in the United States. Currently, the Department includes about 320 undergraduate students, 250 graduate students, 60 professors, 40 professional staff and a number of visiting scholars. Five of the active faculty are members of the prestigious National Academy of Engineering.

In broad general terms, civil engineering activity commonly centers around research, development, planning, design, and construction of large facilities and systems in the public interest. Civil engineering projects include such items as highway, airports, railroads, bridges, buildings, tunnels, dams, hydraulic facilities, power plants, offshore platforms, oil terminals, pipelines, space structures, environmental engineering (including water, sewage, air quality), arctic projects, natural resources and systems studies. The tools of civil engineering include a sound basic knowledge of mathematics, physics, chemistry, economics, writing and speaking skills, and computers. The foregoing provides only a glimpse into our exciting field.

Please visit Newmark Laboratory and observe the role of civil engineers in the building of America.

*William J. Hall*  
William J. Hall, Head

Department of Civil Engineering

## CIVIL ENGINEERING IS . . .

### DEPARTMENT OF CIVIL ENGINEERING

The Department of Civil Engineering is a large department. It includes in its student body approximately 320 undergraduate students and 250 graduate students. It has an annual budget of about 6 million dollars, the sources of these funds being divided approximately equally between appropriated State funds and funds acquired through the efforts of the Department from outside sources. Some sixth faculty members are engaged in teaching and research in the various areas of specialization with Civil Engineering.

The program of the Department embraces the primary areas of instruction, research, and public service. The instructional program includes a broad spectrum of course offerings both in the undergraduate and graduate levels. Approximately half of the effort of the Department is devoted to research, which is an integral and necessary component of the graduate educational program.

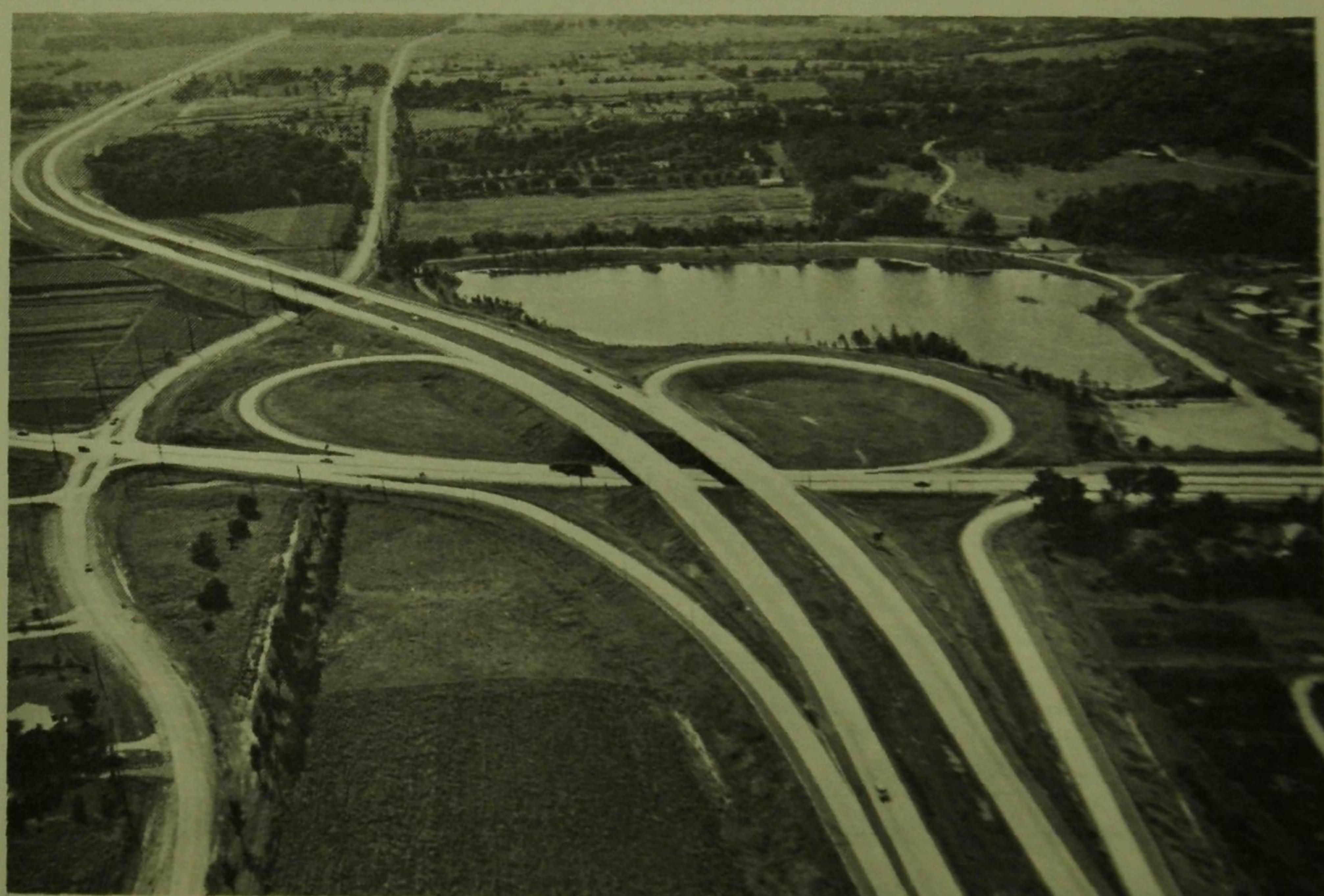
This Department is one of the centers of excellence in Civil Engineering education in the United States. A large percentage of the faculty who hold positions of influence and responsibility in national and international engineering organizations, and on advisory councils and commissions to federal and state governments. Another, and perhaps the most significant, measure of the distinction of this Department is found in the accomplishment of its alumni, many of whom are recognized as leaders in the profession.

### STRUCTURES:

Structural engineers design and supervise the erection of major structural systems. Many factors that apply to safety, economy, function, and appearance must be considered in the design of such structures. Structural engineers must be able to identify loads and forces, consider the effects of storms and earthquakes, select the appropriate geometric form, and choose the materials used in building structural systems. Structural engineers emphasize their studies in the areas of engineering mechanics, properties and behavior of materials, and structural analysis and design.

### TRANSPORTATION

Transportation engineers are responsible for the planning, analysis, design, construction, maintenance, and safe operation of all types of transportation facilities needed for the efficient, convenient movement of people and goods. Transportation engineers who are concerned with transportation planning must know the political, economic, operational, and environmental aspects of transportation systems; while transportation facilities engineers concentrate their attention on the design, construction, and maintenance of roadways, railroads, bridges, and airports.



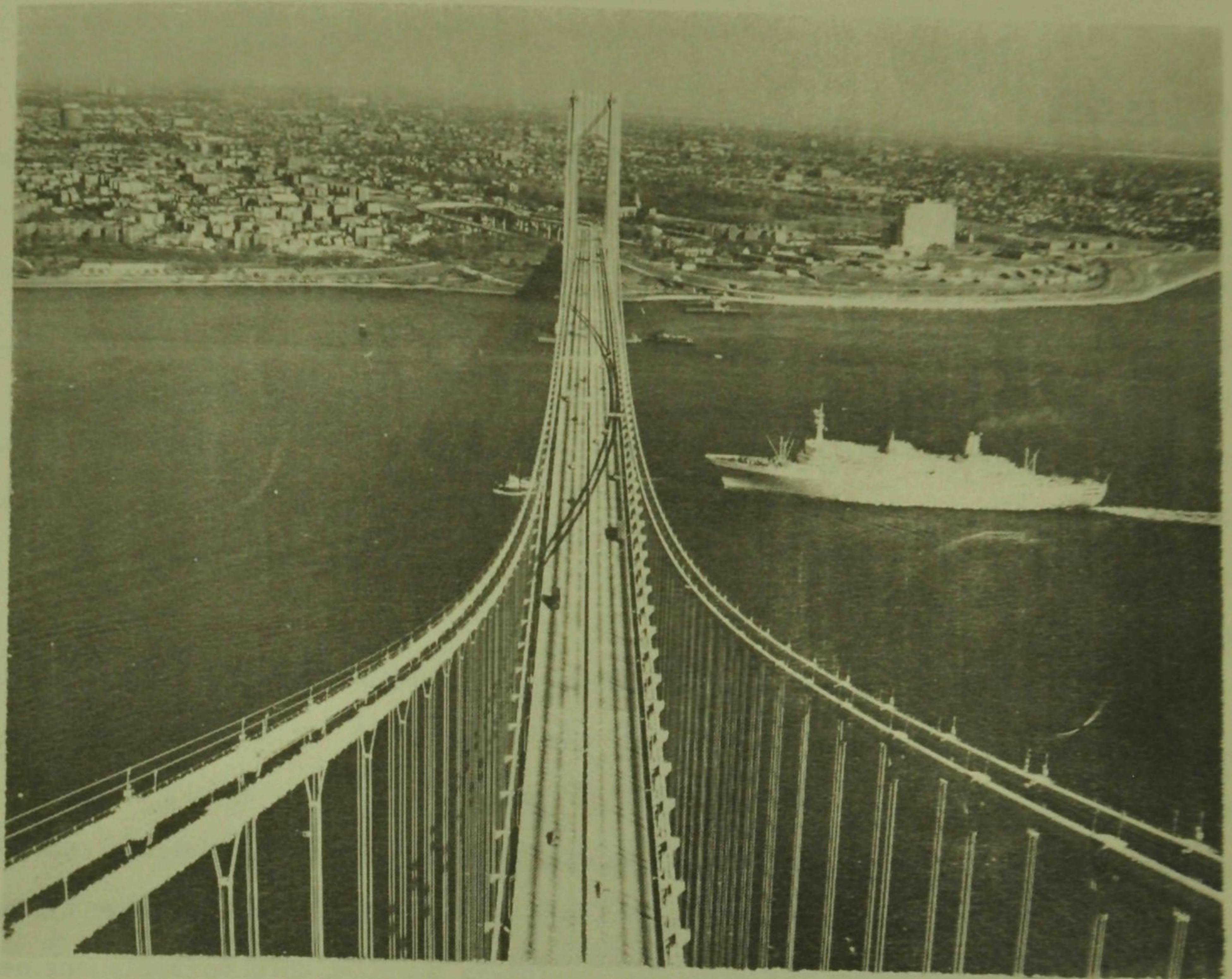
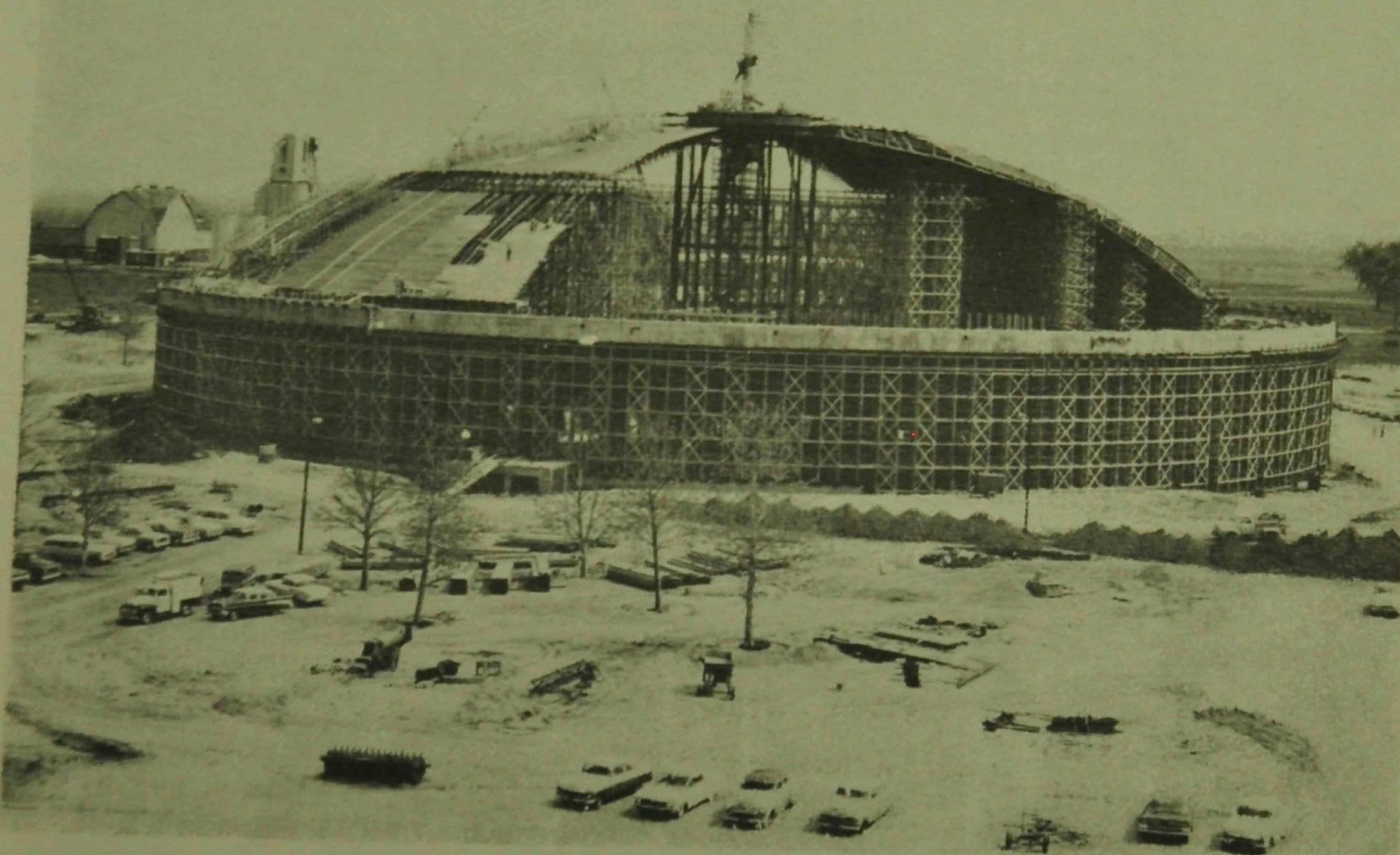
#### CONSTRUCTION:

Construction engineers plan, coordinate, and supervise the building of major facilities. They transform plans and specifications into functional projects that serve society's needs. Construction engineers must have a thorough knowledge of the computer-based scheduling, estimating, and resource allocation techniques used by modern contractors. This is because they plan each job from start to finish, determining the equipment, plant, and workers required, as well as estimate costs and monitor expenditures concentration within this specialization has emphasis in construction engineering and management.

#### MATERIALS ENGINEERING

Construction materials engineers are responsible for specifying, designing, and/or manufacturing the materials with which they build their structures. Studies in construction materials are intended to make the structural, transportation, and foundation engineers aware of the fundamental properties with which they work. Topics such as the physics and chemistry of metals, ceramics, and polymers are studied in preparation for work in this area. They provide a basis upon which the behavior of structural steel, asphalt, concrete, and other materials can be considered.

#### ASSEMBLY HALL UNDER CONSTRUCTION



**VERRAZANO-NARROWS BRIDGE**

#### PHOTOGRAMMETRIC AND GEODETIC:

Photogrammetric and geodetic engineers map the earth's surface using electronic surveying equipment and complex analytical techniques. They are able to determine with great accuracy the heights of mountains, the locations of rivers, the dimensions of geological formations, and the precise locations of points on, above, or beneath the earth's surface. Surveying is an essential tool for determining the physical characteristics of project sites and for laying out and constructing large facilities according to plan. The newest surveying techniques include measurements by satellite positioning which proves to be very accurate and fast.

#### GEOTECHNICAL

Geotechnical engineers work with the earth's natural building materials, soils and rocks. They design and supervise the construction of foundations for major structures, such as high-use buildings, power plants, dams, and bridges. Geotechnical engineers must have an understanding of the origins and properties of soils and rocks and of the utilization of these materials in modern construction. Their knowledge and experience enable them to use these materials safely and, with respect for the natural environment, to build canals, tunnels, and dams to serve society's needs. Emphasis is placed on the geological sciences and structural mechanics for this particular specialization.

#### ENVIRONMENTAL

Environmental engineers design and operate systems that purify air and H<sub>2</sub>O and/or treat municipal and industrial wastes so that they can be recycled or disposed of without harming humans or the environment. Environmental engineers are involved in the development and management of our air and H<sub>2</sub>O resources. The production of pure drinking H<sub>2</sub>O requires the removal of harmful chemicals and microorganisms. The treatment of wastes for safe disposal requires a thorough understanding of pollutants. A background in the chemical and biological sciences is necessary for this area of specialization.

#### HYDROSYSTEMS

Hydrosystem engineers are responsible for the planning, design, construction, and operation of facilities for the control and utilization of water. Using modern technology and sound planning, they work to assure an adequate supply of clean, safe water to our cities, industries, and agricultural installations; to relieve the effects of erosion along coastlines and river beds; and to provide adequate drainage systems as well as hydroelectric power. Hydrosystem engineers must be able to apply engineering and economic principles to the management and control of groundwater, lakes, rivers, and estuaries. Knowledge of the hydraulic sciences is essential to the successful completion and operation of projects such as reservoirs, canals, river navigation systems, harbors, offshore facilities, and ocean structures.

## STUDENT SOCIETIES IN CE

#### ASCE

- The American Society of Civil Engineers.

This society was founded in 1852 and represents the oldest national engineering society. On the University scale, ASCE helps students through their college years as well as preparing them for the future. On the professional level, ASCE is devoted to the advancement of CE knowledge and enhancement of the professional status of the civil engineer.

#### CHI EPSILON

- This fraternity is the Civil Engineering Honor Society.

It recognizes outstanding scholarship as well as participation in other university activities. The University of Illinois founded Chi Epsilon in 1922 and is proud to maintain and promote the status of civil engineering as an ideal profession. Basically, Chi Epsilon sponsors guest speakers and enlists in service projects that aid the University and community.


#### AGC

- The Associated General Contractors of America.

AGC is a group of students who share a common interest in the construction industry and process. AGC sponsors activities throughout the year designed to further this interest and to give practical insight into how projects go from paper to solid form.

.... DIVERSIFIED

# ENGINEERING CAMPUS



# Civil Engineering at the University of Illinois

## CIVIL ENGINEERING OPEN HOUSE COMMITTEE

Faculty Chairman: Professor D. A. Abrams  
Student Co-chairman: Perfecta Baffer

### FACULTY

Barenberg                   Herricks                   Paul  
Boyer                        Herrin                     Sozen  
Foutch                      Khachaturian             Valocchi  
Gamble                     McDonald                   Walker  
Hall                        Mesri

### NON-AC

Claudia Cook             Del McCulley  
Don Jensen               Dick Shipley  
Melody Kadenko           Carroll Swan  
Clen Lafenhagen           Ron Winburn  
Louise LeRette

### STUDENTS

Vahid Aminian  
David Arenas  
John Breslin  
Allen Brooks  
\*Tammy Brushaber  
\*Mary Bryant  
Flora Calabrese  
Gary Clack  
\*Steve Clark  
\*Richard Cooper  
\*Ed Doyle  
\*Ray Drexler  
Steve Elam  
Mike Faber  
Rochelle Gaseor  
John Grendzinski

Ashraf Hameedi  
Bart Hardesty  
Laurie Hellman  
Tracy Jezisek  
Arne Johnson  
\*Lynn Kastel  
\*Joe Kimlinger  
Jeff Klinar  
Mark Kuberski  
Jeff Linkenheld  
Edward Liu  
Marianne Lopez  
\*Judy Marsh  
Steve Melching  
\*Phillip Meyers  
Dave Nauman

Russ Nygaard  
Joe Odencrantz  
Lance Peterman  
Eric Petraitis  
Russ Renner  
Cathleen Seiler  
\*Bill Sieczkowski  
John Stiber  
Steve Stone  
Rob Twardock  
\*Joe Vespa  
\*William Vogel  
Tom Walsh  
Doug Whitney  
Sarah Wilson  
Bill Zehrt

\*Denotes Chairperson